

# **Epidemiology of HIV/AIDS in Hawaii**

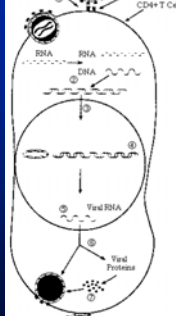
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STD/AIDS Prevention Branch

**Epi Seminar, September 27, 2004**  
**Hawai'i State Department of Health**

**Coordinator, HIV/AIDS Surveillance Program  
STD/AIDS Prevention Branch**

# HIV Infection



The diagram illustrates the HIV infection cycle within a host cell. At the top, a virus particle with surface proteins CD4, CXCR4, and TCR is shown binding to a target cell. The cycle proceeds through several numbered steps: 1. Fusion of the viral envelope with the host cell membrane. 2. Reverse transcription of viral RNA into DNA. 3. Integration of the viral DNA into the host genome. 4. Transcription of the integrated DNA into new viral RNA. 5. Translation of viral RNA into viral proteins. 6. Assembly of new virus particles. 7. Budding of new virus particles from the host cell. The diagram also shows the release of new virus particles from the host cell.

Viral Load

The diagram illustrates the life cycle of HIV. It begins with an HIV virus (1) attaching to a target cell via its envelope and glycoproteins, specifically binding to CD4 and CXCR4 receptors. Inside the cell, the viral RNA is reverse-transcribed into DNA (2) by the enzyme Reverse Transcriptase (RT). This viral DNA is then integrated into the host cell's genome (3) by the enzyme Integrase. The integrated DNA is subsequently transcribed into new viral RNA (4). Finally, new HIV particles (5) bud from the cell surface, completing the cycle.

# Hawaii HIV Reporting

- Unnamed Test Code (UTC)
- Since August 27, 2001
- Required by Hawaii Administrative Rules
- All HIV positives are to be reported
- Providers to report cases with demographics
- Laboratories to report HIV+ test results

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Month		Day		Year	

Month of Birth Helper

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Jan	0 1	Feb 0 2
Mar	0 3	Apr 0 4
May	0 5	Jun 0 6
Jul	0 7	Aug 0 8
Sep	0 9	Oct 1 0
Nov	1 1	Dec 1 2

# HIV Reporting Status, July 2004

<u>Code Reporting</u>	<u>Name to Code Reporting</u>
• DC	• Delaware
• Hawaii	• Maine
• Illinois	• Montana
• Kentucky	• Oregon
• Maryland	• Washington
• Massachusetts	
• Rhode Island	<u>Other</u>
• Vermont	• Connecticut
• California	• New Hampshire

## Code Reporting

- ## Name to Code Reporting

- Delaware
- Maine
- Montana
- Oregon
- Washington

- Connecticut
- New Hampshire

# HIV Code - Based Reporting States July 2004

Named Reporting  
35 states:

AI, AK, AZ, AR, CO, FL, GA, ID, IN, IA,  
KS, LA, MI, MN, MS, MO, NE, NV, NJ, NM,  
NY, NC, ND, OH, OK, PA, SC, SD, TN, TX,  
UT, VA, WV, WI, WY

Guam, Puerto Rico, Virgin Islands

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## Guam, Puerto Rico, Virgin Islands

## Physician's Role in HIV/AIDS Surveillance

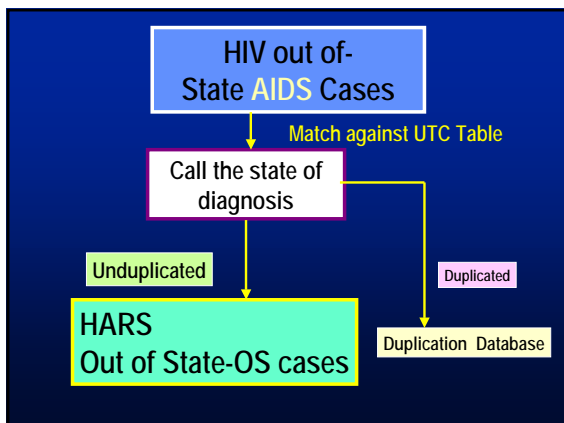
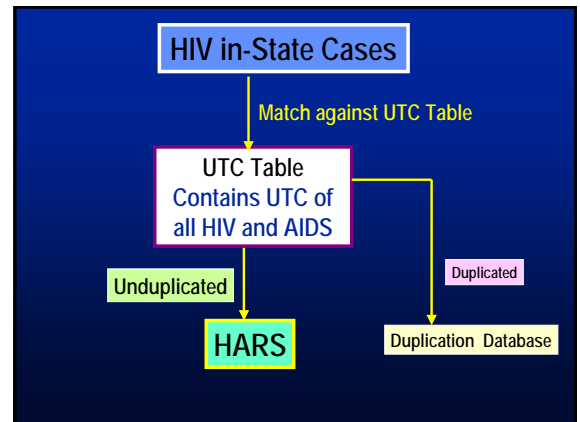
- Create UTC
- Verify the accuracy of each UTC
- Ensure completeness of HIV case reports
- Report HIV positive case reports in a timely manner
- Continue named-AIDS reporting as usual

## Laboratory's Role in HIV Surveillance

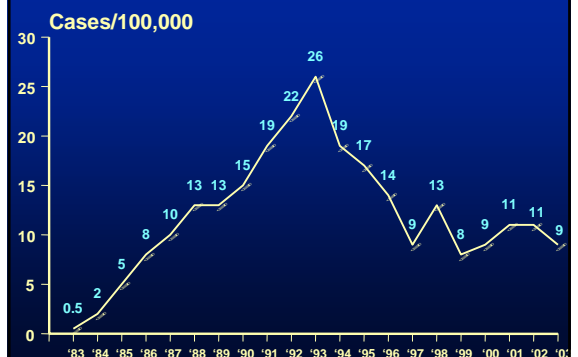
- Laboratories in Hawaii that perform HIV testing report of confirmatory HIV +ve test results
- Laboratories that outsource to mainland HIV testing sites report of confirmatory HIV +ve test results

## Hawaii HIV/AIDS Reporting Systems and cases

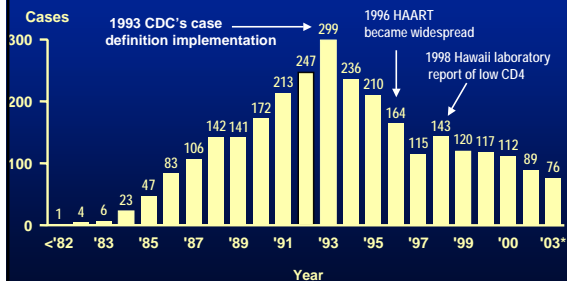
HIV	AIDS
By UTC	Name
From August 27, 2001	From 1983
As of June 30, 2004	As of June 30, 2004
1. HI diagnosed = 759	1. HI Diagnosed = 2,876
2. Number of conversion of HIV to AIDS = 77	2. Out-of-state = 333
3. Out-of-state = 78	



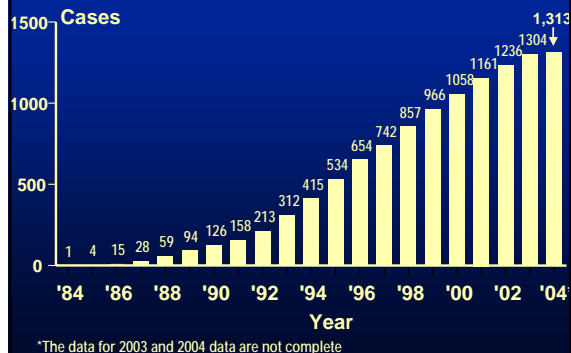
## Hawaii AIDS Incidence Rate by Year of Report



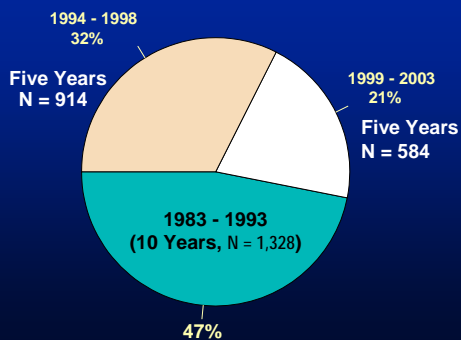
## Hawaii AIDS Cases by Year of Diagnosis As of 2003 (N = 2,866)



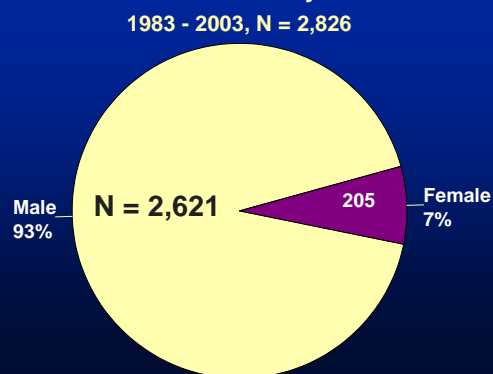
## Hawaii People Living with AIDS by Year As of June 30, 2004 (N = 1,313)



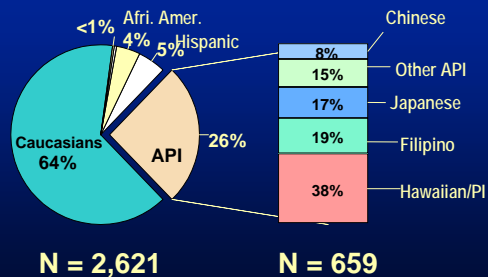
## Hawaii AIDS Cases by Three Time Periods



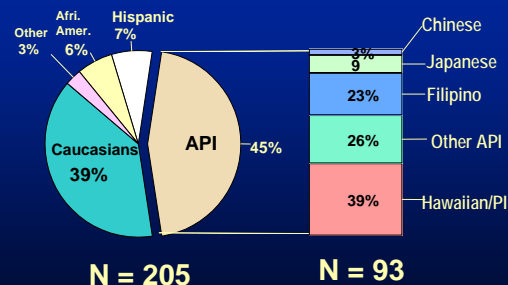
## Hawaii AIDS Cases by Gender 1983 - 2003, N = 2,826



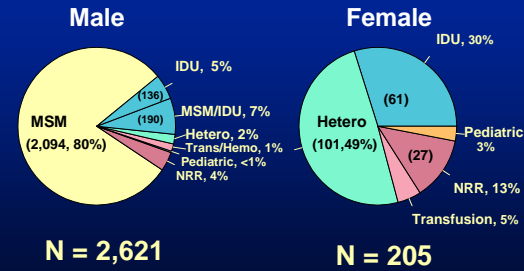
## Male AIDS Cases by Race/Ethnicity 1983 - 2003



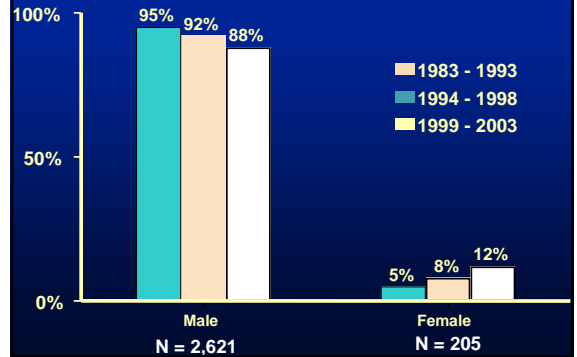
## Female AIDS Cases by Race/Ethnicity 1983 - 2003



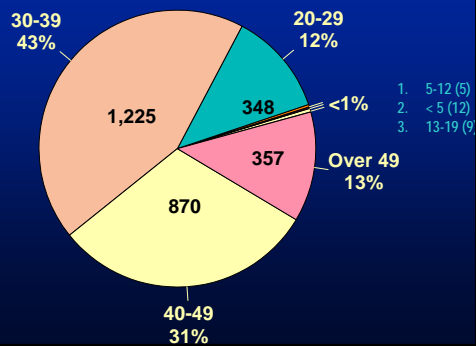
### Male and Female AIDS Cases by Risk 1983 - 2003



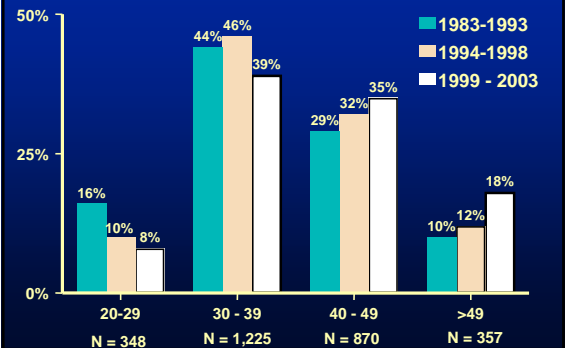
### Percent of Male and Female AIDS Cases Three Time Periods



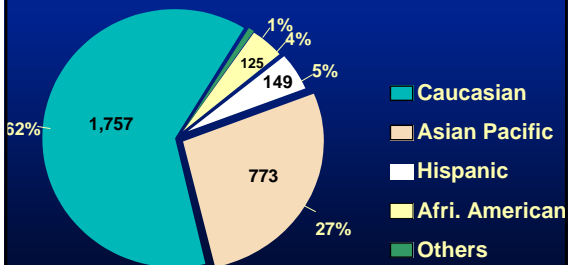
### Hawaii AIDS Cases by Age 1983 - 2003



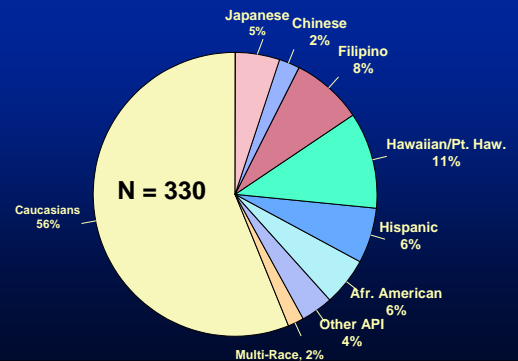
### Percent of Hawaii AIDS Cases by Age Three Time Period



### Hawaii AIDS Cases by Race/Ethnicity 1983 - 2003, N = 2,826



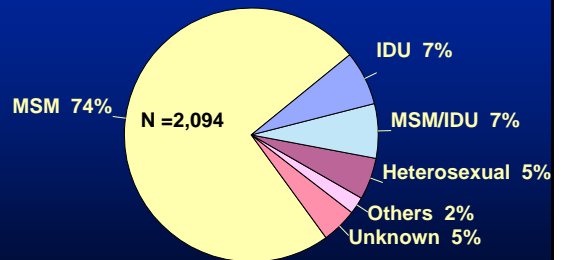
### Hawaii Reported AIDS Cases by Race/Ethnicity Five-Year Period (July 1, 1999 - June 30, 2004, N = 591)



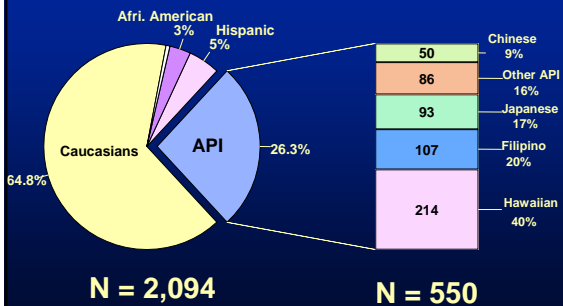
## Hawaii AIDS Cases and Populations

Race/Ethnicity	AIDS Cases 1999-2003, N = 591	2000 Population N = 1,211,537
Caucasians	56.0 %	31.4%
Afri. American	5.6 %	2.3 %
Am. Indian/Alaskan	1.7 %	0.4 %
Asians or Pac IS	30.5 %	65.9 %
Japanese	4.9 %	21.5 %
Filipino	8.3 %	18.2 %
Hawaiian	10.9 %	8.6 %
Chinese	2.4 %	6.0 %
Korean	<1 %	2.5 %
Samoan	<1 %	1.7 %
Vietnamese	<1 %	0.8 %
Other API	3.7 %	6.3 %
Hispanic	6.3 %	7.2 %

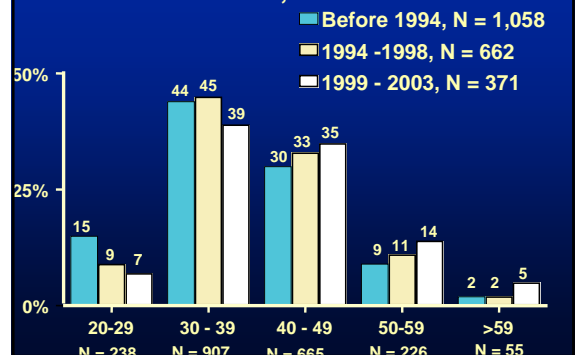
## Hawaii Reported AIDS Cases by Risk 1983 - 2003, N = 2,826



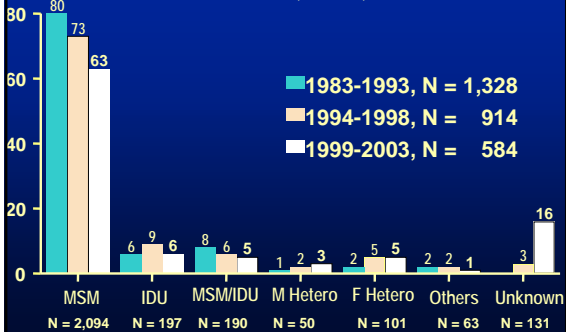
## MSM AIDS Cases by Race/Ethnicity 1983 - 2003, N = 2,094



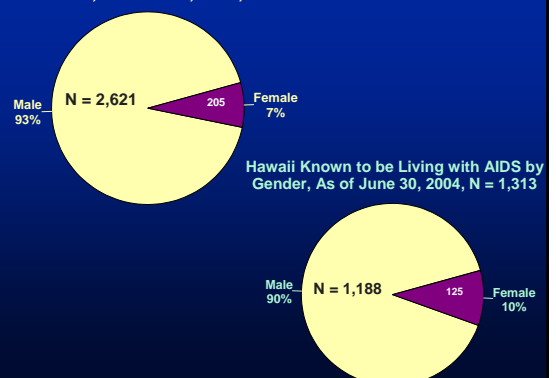
## MSM AIDS Cases by Age Group N = 2,094

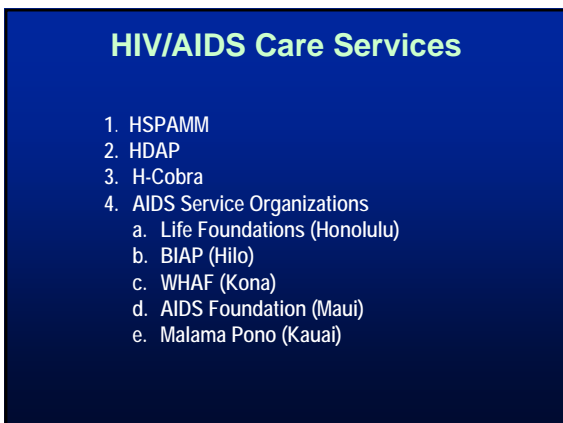
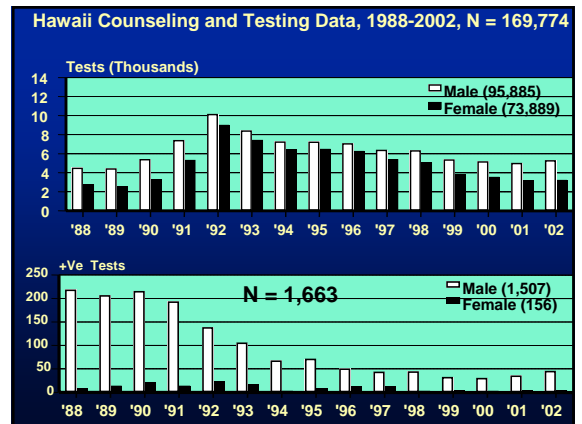
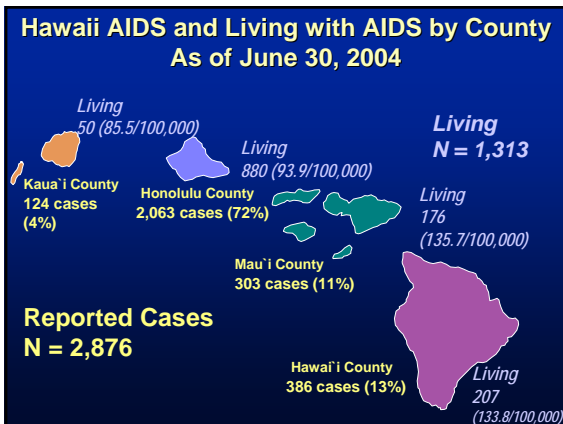
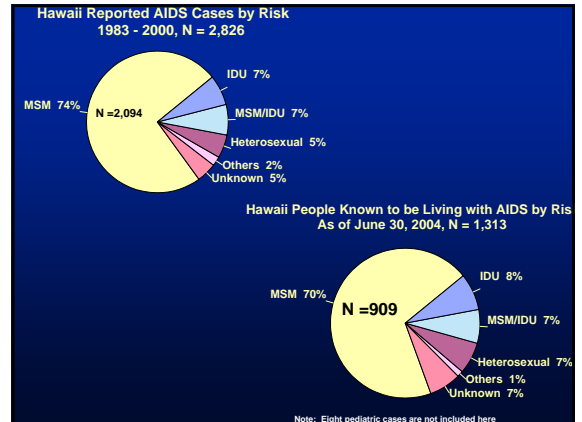
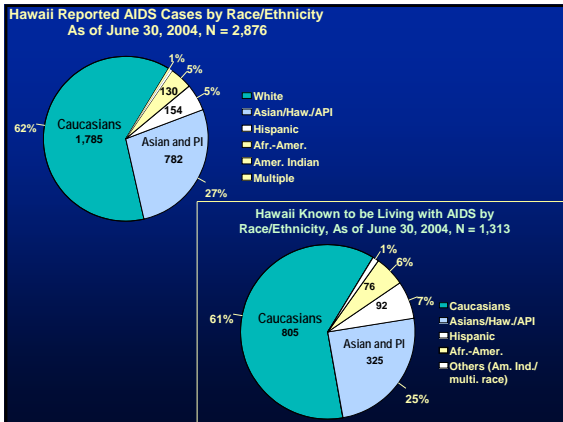


## Percentage of Hawaii AIDS Cases by Risk 1983 - 2003, N = 2,826



## Hawaii Reported AIDS Cases by Gender, 1983 - 2003, N = 2,826





**Percent Distribution of People in Care in Hawaii ASO, As of 2002**

Number Served	HSPAMM Program, (N = 878) %	ASO (N = 1,001) %	PLWA (N = 1,154) %
<b>Gender</b>			
Male	89	86	91
Female	12	13	9
Transgender	--	<1	0
Unknown	--	<1	0
<b>Age</b>			
<13	--	0	<1
13-24	4	1	<1
25-44	32	53	46
45-64	40	42	50
65+	24	1	3
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Percent Distribution of People in Care in Hawaii ASO, As of 2002

Number Served	HSPAMM Program, (N = 878) %	ASO (N = 1,001) %	PLWA (N = 1,154) %
<b>Race/Ethnicity</b>			
Caucasian	57	53	64
Afr. American	4	5	5
Hispanic	7	8	7
Asian and PI	25	30	24
Native Am./Alas.	1	--	<1
Multiple Race	--	--	<1
Unknown/Other	6	4	0
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Percent Distribution of People in Care in Hawaii ASO, As of 2002

Number Served	HSPAMM Program, (N = 878) %	ASO (N = 1,001) %	PLWA (N = 1,154) %
<b>Risk</b>			
MSM	69	77	71
IDU	6	7	8
MSM/IDU	6	4	7
Heterosexuals	13	8	7
Other	3	<1	2
Unknown	3	4	5
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

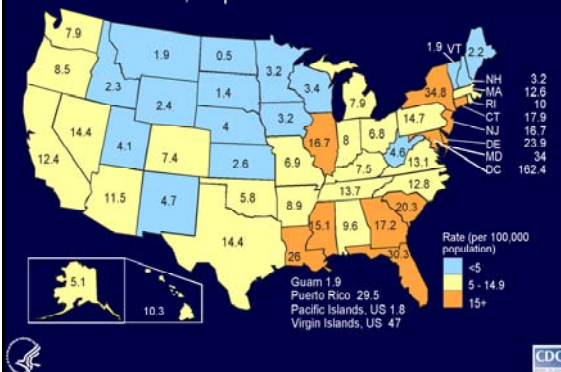
### AIDS Cases, US, 2002

- As of 2002, number of AIDS reported = 859,000
- CA, FL, and NY states reported to CDC 44% of the cumulative cases, and 38% of cases were in 2002.
- Rate of AIDS cases ranged from 0.5/100,000 in ND to 162.4/100,000 in D.C.
- In 2002, 43,950 cases were reported, 158 AIDS cases were in children.
- In 2002, 74% of the 43,950 reported AIDS cases were in men and 26% were in women.
- In 2002, 158 (0.4%) cases in children were reported

### HIV (non-AIDS) Cases, US, 2002

- As of 2002, 199,759 HIV (non-AIDS) cases were reported to CDC from 39 confidential named-based reporting states.
- NY, FL, NJ, TX, and NC reported 35% of the cumulative cases.
- In 2002, FL, NY, and TX reported 64% of the total HIV cases.
- In 2002, 68% of the 35,147 reported AIDS cases were in men and 32% were in women.
- In 2002, 420 (1%) cases in children were reported.

AIDS Rates, Reported in 2002—United States



### Global Summary of HIV/AIDS

As of December 2003

<b>People newly infected with HIV in 2003</b>	<b>Total</b>	<b>5 Million</b>
	Adults	4.2 Million
<b>Death Due to HIV/AIDS in 2003</b>	<b>Total</b>	<b>3 Million</b>
	Adults	2.5 Million
	Children <15 years	500,000
<b>Number of People living with HIV/AIDS</b>	<b>Total</b>	<b>40 Million</b>
	Adults	37 Million
	Children <15 years	2.5 million
<b>Total Number of Death with HIV/AIDS</b>	<b>Total</b>	<b>25 Million</b>
	Adults	19 Million
	Children <15 years	5.3 Million

Data source: [www.unaids.org](http://www.unaids.org)

## For more information:

E-Mail: [pbortha@java.net](mailto:pbortha@java.net)

Website address for the reports:

<http://www.hawaii.gov/health>

Or

[http://www.hawaii.state.hi.us/doh/resource/comm\\_dis/std\\_aids/aids\\_rep/](http://www.hawaii.state.hi.us/doh/resource/comm_dis/std_aids/aids_rep/)

Or

Tel: 733-9010, Fax: 733-9015

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